MARINE CORPS
WARFIGHTING LABORATORY

DRAGON RUNNER

fact sheet

Dragon Runner is a small, four-wheeled, all-wheel-drive, invertible, toss-able, remotely operated, low-cost, man-portable Mobile Ground Sensor designed to increase situational awareness at the small-unit level. It will provide tactical Marine units with the capability to see "around the corner" or provide real-time imagery in environments where human access is impractical or unsustainable.

Background: Tactical, small units rely on their eyes and ears for situational awareness and reconnaissance, surveillance and target acquisition information. In today's modern battle space, where potential enemies understand the U.S. strengths and capitalize on the asymmetric nature of urban areas, small-unit leaders will increasingly enter these hostile environments and encounter life-threatening situations. The Lab recognized that tactical units need a small, low-risk capability to conduct RSTA and enhance unit situational awareness to reduce danger to Marines operating in these environments. Dragon Runner aims to address a number of these requirements.

Dragon Runner is managed and funded by the Marine Corps Warfighting Lab. The prototype system is being developed by the National Robotics Engineering Consortium, Carnegie Mellon University's Robotics Institute, Pittsburg, Pennsylvania

Description: Dragon Runner will increase a Marine unit's situational awareness by providing real-time imagery of tactical objectives and potential danger areas beyond the unit's line of sight, both day or night. The system will enhance small-unit force protection or early warning by standing watch in the "sentry mode" by using several on-board motion and audio sensors to monitor selected areas and provide both audio and tactile alerts to the user. Dragon Runner may also be configured to carry mission-specific payloads such as lethal, non-lethal, and NBC/explosive detection.

The prototype Dragon Runner mobile ground sensor system consists of a vehicle, a Small Operator Control System (OCS) and a simple ambidextrous handheld controller for one-handed operation, all held in a custom backpack. The vehicle has a top speed of about 20 miles per hour and can be operated with slow, deliberate, finite control. The system will be easy to operate, require little formal operator training, and can be deployed from the pack in less than three seconds.

Dragon Runner development for FY04 will include: improved shell, payload interface, explosive detection payload, remote delivery payload, and multi unit prototype build. The total system, to include pack and batteries, will not exceed 30 pounds. A non-active and invertible suspension enables Dragon Runner to be tossed through windows, up stairs, and over walls for a rapid deployment capability.

Deliverable Product: The prototype Dragon Runner system will be a baseline concept demonstrator for the material developer.

info: **Public Affairs Office:** (703) 784–5170
DTD: December 9, 2003

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